



# Internal Audit Report

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## Change Order Process

TxDOT Office of Internal Audit

## Objective

To determine if change orders are properly classified and approved within established limits.

## Opinion

Based on the audit scope areas reviewed, control mechanisms are effective and substantially address risk factors and exposures considered significant relative to impacting operational execution and compliance. The organization's system of internal controls provides reasonable assurance that most key goals and objectives will be achieved despite significant control gap corrections and improvement opportunities identified. Control gap corrections and improvement opportunities identified are likely to impact the achievement of the organization's business/control objectives, but management has agreed to corrective action plans to address the relevant risks within 6 months.

Overall Engagement Assessment		Satisfactory		
Findings				
	Title	Control Design	Operating Effectiveness	Rating
Finding 1	Approval of Change Orders	x	x	Satisfactory

Management concurs with the above finding and prepared management action plans to address deficiencies.

## Control Environment

Construction Division (CST) and Maintenance Division (MNT) have designed policy and procedure manuals and guides to assist districts in performing their roles and responsibilities related to change orders, and to define expectations for compliance, performance, and support. Additionally, the CST and MNT divisions have established thresholds for approval in both the change order document and SiteManager\*, the project management system and system of record. District Engineers also have the authority to re-delegate approval to their district staff within established limits. Those delegations of authority, and any re-delegation, must be filed with the TxDOT Contract Services Office (CSO).

\*SiteManager is a registered trademark of American Association of State Highway and Transportation Officials (AASHTO)

**Summary Results**

Finding	Scope Area	Evidence
1	Change Order Review	<p>Construction and Maintenance project change order approvals did not adhere to delegation of authority limits as follows:</p> <ul style="list-style-type: none"> <li>• 46 of 150 (31%) change orders reviewed, totaling \$17.7 million, had approvals in SiteManager that were not within the districts' documented delegation of authority limits</li> <li>• 29 of 150 (19%) change orders reviewed, totaling \$6.5 million, had approvals (separate from the SiteManager approval) that were not within the documented delegation of authority limits</li> <li>• Approvals for time or materials were considered reasonable based on project needs</li> </ul>

**Audit Scope**

The audit focused on change order activities including the review, documentation, and approval (both in SiteManager and in project files) of change orders executed between September 1, 2013 and June 1, 2015. Change order documentation was reviewed to determine 1) proper classification through "reason codes," which document the need for the change order and 2) compliance with the delegation of authority on file for the district. A risk based sample was selected from seven districts using total dollar amount, total number of change orders entered into between the test period dates noted above, and district classification (i.e., Metro - Dallas, Fort Worth, and Houston; Rural - Atlanta and Paris; and Urban - Corpus Christi and Waco). The population from which the sample was selected included only district change orders for construction and maintenance for the fiscal year to date as of June 1, 2015 and fiscal year 2014.

The audit was performed by Jill Emery, Dennis Frazier, David Kossa, Franciou Niclas, Chris Williams, and Jack Timmins (Engagement Lead). The audit was conducted during the period from June 8, 2015 to August 31, 2015.

**Methodology**

The methodology used to complete the objectives of this audit included:

- Reviewed federal regulations, state laws, TxDOT policies and procedures, and TxDOT manuals including the Construction Contract Administration Manual, Maintenance Contract Manual, and SiteManager Contract Administration Manual
- Interviewed key personnel including district and division CST and MNT employees
- Reviewed Standard Operating Procedures, checklists, and templates utilized in the preparation of change orders
- Reviewed prior internal/external audit reports applicable to the change order process
- Selected a sample of projects from seven districts where change orders had been processed during the test period; further stratified based on number of change orders and dollar volume
- Reviewed contract and change order files/documentation for reason code justification, evidence of review, justification of prices for changed bid items, and approval in accordance with the established delegation of authority

These procedures were applied as necessary to perform the audit fieldwork.

## Background

This report is prepared for the Texas Transportation Commission and for the Administration and Management of TxDOT. The report presents the results of the Change Order Process audit, which was conducted as part of the Fiscal Year 2015 Audit Plan.

TxDOT, through the Construction Division (CST), Maintenance Division (MNT), and district offices enters into contractual agreements with vendors to complete work on construction and maintenance projects throughout the state. Modifications to scope of work and worksite conditions can occur at different stages throughout the project, and can include the introduction of “value-engineering” (i.e., a process of identifying better or cheaper alternatives to the original designed construction). Additionally, unforeseen events such as impacts from the weather could result in modifications. When modifications meet certain criteria, such as dollar volume, materials quantities, time changes, or substantial changes in scope, they will be documented and approved through the change order process. Change orders are contractual agreements to modify an original contract. They are entered into SiteManager for managing performance, approved, and then the agreement is generated by SiteManager and signed by the delegated authority. Prior to developing a change order, TxDOT district employees work with the contractor to define the scope of the problem that requires a change to the contract, including pricing, and then evaluating possible solutions with the contractor.

Reasons for issuing change orders include, but are not limited to, the following:

- an error or omission in the contract on the part of TxDOT or the contractor
- differing site conditions
- revising a specification
- additional items of work
- resolving a dispute
- changing the sequence of work
- other contract changes

Change orders are classified by reason, and the reason code is entered into SiteManager. The top 11 reason codes associated with construction contract change orders are depicted in Table 1 for the period between September 1, 2013 and June 1, 2015.

From September 1, 2013 until June 1, 2015, the department issued 5,952 change orders on construction projects and 1,499 change orders on maintenance projects. Change orders associated with construction contracts totaled \$77 million in FY 2015 (through June 1) and \$115 million for the entire FY 2014. For the same periods, maintenance change orders totaled \$59 million and \$72 million, respectively. Table 2 illustrates the total dollars of change orders issued by district during the test period noted.

Table 1: Construction Change Orders by Reason Codes September 1, 2013-June 1, 2015

Reason Code/Description	Dollar Amount <sup>(4)</sup>	Count
3F-ADDITIONAL WORK DESIRED BY TXDOT	\$60,928,871	1,113
1B-INCORRECT PLANS, SPECIFICATIONS & ENGINEERING (PS&E) (CONSULTANT DESIGN)	24,360,875	668
1A-INCORRECT PS&E (TXDOT DESIGN)	23,877,765	773
2A-DIFFER SITE CONDITION (UNFORESEEABLE)	21,199,966	731
3A-DISPUTE RESOLUTION	15,502,267	66
1C-DESIGN ERROR OR OMISSION (OTHER)	13,861,001	305
4B-3RD PARTY REQUEST FOR ADDITIONAL WORK	11,156,727	102
1D-DES ERROR DELAY, REWORK, INEFF-TXDOT	8,497,420	70
3L-REVISING SAFETY MEASURES	8,050,476	281
3H-COST SAVINGS OPPORTUNITY	(12,163,706)	132
7D-CONTRACT TERMINATED-ROW	(16,129,992)	1
<b>Net Total</b>	<b>\$159,141,670</b>	<b>4,242</b>

**Source:** Construction: TxDOT SiteManager

**Note:** <sup>(4)</sup> Negative numbers indicate dollar savings

Table 2: Construction and Maintenance Change Orders by Dollar Amount

District <sup>(2)</sup>	Construction		Maintenance	
	FY 2015	FY 2014	FY 2015	FY 2014
	(9/1/14 to 6/1/15)		(9/1/14 to 6/1/15)	
HOUSTON	\$17,569,397	\$30,274,736	\$4,117,323	\$4,842,093
DALLAS	13,714,645	16,241,594	378,688	13,817,853
CORPUS CHRISTI	8,564,250	8,073,715	3,108,312	5,464,730
WACO	8,563,276	8,089,594	833,569	391,166
EL PASO	8,547,866	3,841,447	2,527,171	1,717,697
SAN ANTONIO	8,233,368	3,610,039	10,632,480	8,363,549
AUSTIN	7,616,117	5,735,190	2,736,873	5,791,583
SAN ANGELO	3,023,970	1,517,115	524,624	2,222,991
PARIS	2,386,415	2,108,491	7,449,203	832,896
PHARR	2,240,525	3,889,604	6,243,800	3,363,233
BEAUMONT	1,922,663	2,685,386	1,819,722	3,741,058
BRYAN	1,711,725	4,768,255	1,361,261	1,625,066
LUFKIN	1,462,925	3,482,582	936,361	314,595
TYLER	1,412,399	1,024,648	1,290,726	1,850,011
LUBBOCK	1,250,574	1,143,697	147,875	1,676,758
AMARILLO	1,232,939	373,620	1,394,830	683,923
ODESSA	1,082,705	3,032,518	2,292,724	1,275,173

## Change Order Process

## TxDOT Office of Internal Audit – Full Scope

YOAKUM	675,237	1,509,689	1,623,669	958,152
ABILENE	470,543	770,604	958,739	2,214,076
WICHITA FALLS	416,596	2,212,661	236,5998	700,677
BROWNWOOD	298,556	705,454	618,329	2,922,699
CHILDRESS	235,699	144,051	(97,775)	589,257
LAREDO	(266,632)	(207,849)	2,405,163	3,857,006
ATLANTA	(2,814,314)	3,676,361	3,296,685	1,214,794
FORT WORTH	(12,065,735)	5,810,451	2,258,286	1,742,660
<b>Total</b>	<b>\$77,485,709</b>	<b>\$114,513,653</b>	<b>\$59,095,236</b>	<b>\$72,173,696</b>

**Source:** Construction/Maintenance data: TxDOT SiteManager

**Note:** (2) district data sorted by FY 2015 Construction dollar amount

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards and in conformance with the International Standards for the Professional Practice of Internal Auditing. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. Recommendations to mitigate risks identified were provided to management during the engagement to assist in the formulation of the management action plans included in this report. The Office of Internal Audit uses the Committee of Sponsoring Organizations of the Treadway Commission (COSO) Internal Control – Integrated Framework version 2013.

A defined set of control objectives was utilized to focus on operational and compliance goals for the identified scope areas. Our audit opinion is an assessment of the health of the overall control environment based on (1) the effectiveness of the enterprise risk management activities throughout the audit period and (2) the degree to which the defined control objectives were being met. Our audit opinion is not a guarantee against operational sub-optimization or non-compliance, particularly in areas not included in the scope of this audit.

## Detailed Finding and Management Action Plans (MAP)

### Finding No. 1: Approval of Change Orders

#### Condition

Change order approvals were not always in accordance with the districts' delegation of authority, which specifies the dollar level approval to ensure change orders are appropriate and necessary.

#### Effect/Potential Impact

Inconsistencies in approving change orders can lead to ineffective, inefficient, or inappropriate use of transportation funds. Key elements in a proper approval include validating a change order is necessary and alternatives have been considered prior to committing to the change, that the change and related expense is in the state's best interest, and that prices have been considered, verified, and justified. Despite the approval exceptions noted, the change orders reviewed for time and materials were considered reasonable based on project needs.

#### Criteria

The Construction Contract Administration Manual (CCAM) Chapter 7, Section 1 requires district personnel to ensure change orders are approved before beginning the changed or altered work. In addition, Chapter 7, Section 2, states that a change order is approved only after signed with the signature authority and allows the discretion to delegate signature authority within the district.

The SiteManager Contract Administration Manual provides guidance for documenting approvals within SiteManager.

#### Cause

Districts and individuals, to whom signature authority has been delegated, were not aware of their obligation and responsibilities under the delegation of authority. Additionally, the policy for approval requires signature approval before work can begin. Delegations of authority are reviewed annually but not necessarily when position changes are made; thus, documented delegation of authority were not updated timely.

#### Evidence

The review of change order approvals in SiteManager and signatures on change order documents to ensure approval at the appropriate level identified the following:

- 46 of 150 (31%) change orders reviewed, totaling \$17.7 million, had approvals in SiteManager that were not in accordance with the districts' documented delegation of authority
- 29 of 150 (19%) change orders reviewed, totaling \$6.5 million, had signature approvals (separate from SiteManager approvals) that were not in accordance with the documented delegation of authority

**Management Action Plan (MAP):**

**MAP Owners:**

Duane Milligan, Dallas District Director of Construction

Valente Olivarez, Jr., P.E., Corpus Christi Deputy District Engineer

Michael D. Bostic, Fort Worth Director of Construction

**MAP 1.1:**

The districts' operating procedures will be updated to reflect:

1. Updated delegation of authority for SiteManager approvals
2. Updated delegation of authority for change order approvals

**Completion Date:**

January 15, 2016



## Observations and Recommendations

**Audit Observation (a): Price Justification**

12 of 150 (8%) change orders reviewed, totaling \$5 million out of \$65 million, did not contain documentation of price justification in the files as required.

**Effect/Potential Impact**

Price justification ensures change order costs are reasonable.

**Audit Recommendation**

Districts should ensure change order documentation is complete and retained in the central file and includes all elements required for approval.

**Audit Observation (b): Submission of Delegation of Authority**

10 of 150 (7%) change orders reviewed (from one district) were approved according to the district's delegation of authority; however, the district did not file the re-delegation with Contract Services Office (CSO), as required.

**Effect/Potential Impact**

Submission of the re-delegation is required to ensure CSO is aware of approval authority in case of contract disputes.

**Audit Recommendation**

Districts should ensure re-delegations are filed as required.

## Summary Results Based on Enterprise Risk Management Framework

Audit Results Dashboard				
Change Order Process				
Business Objectives (Reporting, Operational, Compliance)		Scope Areas Evaluated		
		O, C		
ERM Component	Control Activities	Change Order Review		
Control Environment	Organizational Tone			
	Planning			
	Forecasting			
	Goal-Setting			
	Cost-Benefit Analysis			
Risk Assessment	Business Continuity			
	Evaluations/Analysis	(a)		
	Management Action Plans			
Control Activities	Policies/Procedure Development & Maintenance	1, (b)		
	Approvals/Authorizations	1		
	Supporting Evidence/Records Availability			
	Segregation of Duties			
	Safeguarding Assets			
Information & Communication	Information Classification			
	Information Input			
	Information Processing			
	Output/Reporting and Messaging			
Monitoring	Exception Reporting Review			
	Reconciliations/Root-Cause Analysis			
	Peer Reviews			
	Management Representations			
Scope Area Assessment				
Rating Assessment Grid		Exemplary	Satisfactory	Needs Improvement
				Unsatisfactory

## Closing Comments

The results of this audit were discussed with the District Engineers for the districts selected and/or their designees on December 1, 2015. The audit team would like to express our appreciation to the District Engineers and their employees for the assistance and cooperation received throughout this audit.